AMERICAN VETERINARY REVIEW,

SEPTEMBER, 1892.

EDITORIAL.

TUBERCULINE, MALLEINE, MORVINE.—The announcement of the discovery of tuberculine, with the recommendation of its utilization as one of the most valuable of assistants in veterinary diagnosis in cases of doubtful bovine tuberculosis, is an occurrence of comparatively recent date. Opinions are still at variance, however, as to its positive value, the experiments of Dr. Arloing seeming to prove that the characteristic reaction is not always reliable, while, according to other authorities, and among them Professor Nocard, the subcutaneous injection of the substance in question has by a long series of experiments established its claim as an almost positive means of diagnosis, by the febrile reaction and elevation of temperature accompanying it.

The discovery of Professor Koch was the preliminary of others, since it was inferred that if such a product could be obtained from the culture of the bacillus of one among the contagious diseases, other and similar affections would, in all probability, be found subject to analagous laws. And it was, indeed, but shortly afterwards that the announcement was made of the claim of Hellmann and Kolning and Preusse that they had obtained from the cultures of the bacillus of glanders a special substance to which they gave the name of malleine, and for which they claim, among other properties, that of causing a rise of temperature similar to that following the inoculation of animals affected with glanders.

Professor Nocard, as shown in an article in last month's REVIEW, has given to malleine the attention which it deserves. He has experimented with it so largely, and so fully stated the conclusions he has reached, that there can no longer be any good reason alleged for ignoring its claims in cases of suspected glanders, or those in which the symptoms may be of a latent character, and have not yet arrived at the stage of manifest development. The *Archives de Medecine Experimentale* contains an article by Mr. A. Babes, of the Bacteriological Institute of Bucharest, which includes some still more important facts. He also had discovered a malleine, but as its action differs somewhat from that discovered by Hellman and Preusse, he has given it the name of *morvine*.

Without entering upon the consideration of the modes of preparation of this substance, and only for the present noticing the fact that numerous experiments have been made by the author, we present the conclusions of Mr. Babes as possessing great value in their relation to the future prophylaxy and therapeuty of glanders.

1st. The bacillus of glanders produces chemical toxic and vaccinal substances.

2d. These are obtained by precipitation in alcohol at 86°, or by saturation with the sulphate of ammonium or of magnesium, or again by precipitation in a mixture of absolute alcohol and ether, or of the filtrate of the cultures in bouillon, or of that of the emulsion of the cultures on potatoes.

3d. The method of precipitation in absolute alcohol and ether is preferable in view of the rapidity of the process, as well as of the purity of the substance thus freed of toxic ptomaine.

4th. These substances have a thermogeneous and toxic action, stronger than the tuberculine of Koch. They have a close analogy with enzymœ.

5th. They do not give rise to local reaction, though a fever occurs, more or less temporary, according to the species of the animal, and convulsions have been sometimes observed. Repeated strong doses become fatal with nephritis and marasmus. They never give rise to glanders.

6th. The action of these substances, which collectively we have called *morvine*, is more manifest in glanderous animals than in others. By regulated dosage, with the assistance of these substances, we have often succeeded in inoculating against glanders, and even—exceptionally—in curing the disease when already developed.

This last conclusion is one of immense importance, while it is true that it is based merely on the result obtained from a single animal, which, after the disease had been diagnosticated by clinical and bacteriological means, was brought to such a condition that the glanderous symptoms were no longer manifested by clinical signs. It is also to be considered that after death the anatomo-pathological and bacteriological examinations failed to show the slightest indication of a glanderous nature. Such a case certainly opens a broad field for the study of the pathologist, as well as offering new points for investigation to the sanitarian in respect to the management of an affection which to this day has been considered incurable.

A WISE SUGGESTION.—The following circular has reached us:

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

PHILADELPHIA, August 2, 1892.

To all Members of the Pennsylvania State Veterinary Medical Association:

Through the courtesy of Secretary Thomas J. Edge, of the Board of Agriculture, the members of our Association are afforded an opportunity to appear at the various meetings of the Farmer's Institutes which are held throughout every county in the State. This opportunity is one that the officers of this Association most heartily commend to all its members. It will bring us more prominently before our people; it will strengthen our organization and it will be the means of bringing our profession to a stronger position among the other professions of our State.

We, therefore, as officers do request that every member will, on receipt of this announcement, send in his name to Secretary Ridge, offering to assist in carrying forth this project whenever he may be called upon. It is desirous that in consenting you will name the subject upon which you are willing to prepare a paper. You may be selected to go to most any portion of the State, but it is generally the plan to select a man close to the centre at which the local institute convenes.

Your traveling expenses are provided for by the Institute so selecting you. A list of those of our members willing to take up this opportunity must be placed

in the hands of Secretary Edge by the 15th of this month. It is therefore absolutely necessary that we have in the Secretary's office a list of all those who are willing to take part.

By order of the officers.

W. Horace Hoskins, *President.*

W. H. Ridge, *Secretary,*
Trevose, Bucks Co., Pa.

Although this is an exclusively State matter, we can but think the example an excellent one to be followed by other commonwealths, in order that the good which may accrue to the profession in Pennsylvania may be shared by their brethren at large, and we consequently recommend it to the secretaries of veterinary associations wherever they may be flourishing.

While this exemplifies a new mode of public education in this country, it has been for many years back in vogue in Europe, and it has exercised a powerful influence in the way of educating the people to an appreciation of the value of the veterinarian to society, and the importance of the services by which the community is made his debtor. Our call is not confined to the cure of diseased animals. It covers a much broader field, and our usefulness reaches in many directions and includes many collateral matters in which our advices and experience can be of advantage to the people. Public conferences on any subject connected with animal economy, so far as veterinary duties and relations are concerned, may, if properly conducted, do much for the elevation of our profession as a body in popular estimation, and can but benefit its members individually. We hope that the call made by the President of the Pennsylvania State Veterinary Medical Association will attract general attention from our friends in the Keystone State, and that the good accomplished and entertainment afforded by the participants may induce other States to join the procession of veterinary knowledge seekers.

United States Veterinary Medical Association.—The following notice reached us at so late an hour that we scarcely find room to insert it in this issue. It is the last notice sent by the zealous and untiring Secretary, and we should consider it failing in our duty did we not call the

special attention of our readers to it. The meeting in Boston will be one of great importance, and, we believe, one of the largest the Association ever had. The work which will be done at Union Hall will be one of lasting influence on the future of veterinary medicine in this country, and no member of the profession can well afford to remain away from it.

The notice reads as follows:

PHILADELPHIA, PA., August 23, 1892.

To all Members of the United States Veterinary Medical Association and the Veterinary Profession throughout the United States:

All applications for membership filed in the office with the Secretary on or before September 15th, will receive consideration at Boston on September 20th.

The Secretary desires to give notice that there will be at least ten papers, aside from the reports of Committees, for consideration at this meeting, embracing subjects of the greatest interest and importance to the entire profession.

All railroads east of Chicago, and the Chicago & Alton from Bloomington, Ill., will grant the one and one-third rates to all members attending this meeting.

The meeting will be held in Union Hall, 48 Boylston St., Boston, Mass., on September 20th, 21st and 22d. The Committee of Arrangements recommend the following hotels: Young's Hotel, U. S. Hotel, Hotel Reynolds, and the Thorndike.

A special meeting of the International Committee of Arrangements will be held at Young's Hotel, September 19th, 1892, at 4 P.M. sharp. A special meeting of the *Comitia Minora* will be held at Young's Hotel at 8 P.M. September 19th, 1892.

The banquet will be given at Young's Hotel. It will close our exercises at 7 P.M. on the 22d. A general invitation is extended to the entire veterinary profession of the United States to be present at this meeting. By order of the Secretary.

W. HORACE HOSKINS.
12 South Thirty-seventh St., Phila., Pa.

President, R. S. Huidekoper.

ORIGINAL ARTICLES.

CONTAGIOUS PLEURO-PNEUMONIA OF THE HORSE.

A Paper read by W. L. Williams, V.S., before the Indiana Veterinary Association.

The so-called pleuro-pneumonia contagiosa of the horse has heretofore received but little attention as a distinct specific disease at the hands of English veterinary writers, the only literature I have been able to find being a paper entitled, "Infectious Pneumonia of the Horse," by Dr. Fleming, appearing in the *Veterinary Journal*, Vol. xxxiii., p. 1.

Prof. W. Williams, in his "Principles and Practice of Veterinary Medicine," gives no recognizable description of the disease, while Prof. Robertson, in his "Equine Medicine," describes it under the head of influenza as one of its forms or types. This view of Prof. Robertson is the one generally obtaining among English veterinarians, and under the head of influenza we find grouped in an indescribable mass along with this affection epizootic catarrhal fever, epizootic cellulitis or pink-eye, with, at times, strangles and other distinct affections. A like view seems to have prevailed among veterinarians in general in continental Europe until a very recent date. In 1881, however, Dieckerhoff described this affection as a distinct specific malady under the name of influenza pectoralis, while grouped under influenza as one of its types the disease was reasonably well described as early as the third decade of the present century.

The literature consulted in the preparation of this paper, and to which indebtedness is acknowledged, is the above cited contribution from Dr. Fleming, Dieckerhoff's "Manual of Special Pathology and Therapeutics," and Friedberger and Frohner's "Special Pathology and Therapeutics." The malady is commonly known to the Germans as brustseuche or chest plague, to the French as bilious pneumonia. It is a specific contagious disease of the horse, and, so far as I can find, has been recorded in no other solipeds or other animals. The pathogenic germ has not been identified to complete satisfaction.

Schutz, Peterlein, Mendelsohn, Perroncito and others have found in the affected lungs spherical or oval bacteria, usually as diplococci, rarely in chains, which are believed to be the essential germ. Schutz made pure cultures of the germ, which destroyed mice and produced gangrenous pneumonia. In some cases, also, he seems to have rendered horses immune by the inoculations. Lustig describes a different micro-organism from that of Schutz, with pure cultures, of which he reports having readily induced the disease in horses which were afterward immune. Intra-venous inoculations with warm blood were followed by negative results in the hands of Dieckerhoff. The same result followed experiments

made by myself by inoculating subcutaneously with warm blood. The pulmonary and pleural exudates are generally credited with being richest in the essential germs, but the constant and severe engorgement of the liver would suggest that organ also as a rich breeding-ground.

The disease exists most frequently in large city stables, extensive breeding studs, military establishments, and other places where there are considerable aggregations of horses. In our great cities the disease becomes permanently established and domiciled, the constant influx of country horses, not yet rendered immune, serving to maintain its uninterrupted prevalence. Friedberger and Frohner hold that it occurs mainly in horses aged five and ten years, but we can only see in this the age at which horses are generally sent to the cities, and largely for the first time exposed. In our experience in an almost purely breeding district we observed more cases in animals below five years than over, young foals suffering as constantly as other ages. We are led to believe, therefore, that age has no influence in the dissemination of the disease. It attacks with equal certainty all breeds, and at all seasons of the year, but, like many contagious diseases, close confinement in crowded, ill ventilated stables, excessive feeding and extremes of labor or inactivity serve to increase the facilities for spreading and markedly heighten the mortality.

While bacteriological investigations as to the contagious nature of this disease are meager, we have clinical evidence of the highest order of its purely specific character. In large cities where, in common with this malady, cellulitis, influenza in its restricted sense, strangles and perhaps other specific equine diseases are permanently rooted, two or more of them not infrequently co-exist in the same stable, and even in the same animal, leading to confusion, and the grouping together by the various veterinary writers (mostly city practitioners) of a number of wholly distinct contagious diseases under the name of influenza. In smaller cities, however, and especially in breeding areas where extensive studs are kept well isolated from other animals, such maladies can be seen

in their purity and studied to advantage, and under such surroundings each outbreak can be traced to its origin with as unerring certainty as in any contagious disease. It usually appears first in these small cities in the livery or sale stables, especially in stallion sale stables, where there are frequent arrivals of horses from long distances. From these centers it gradually spreads to smaller private stables and to breeding farms in the vicinity, the latter usually becoming infected through the bringing in of a new animal, or more frequently by means of the regular driving team of the farm, which is habitually placed in the large stables when driven to the city. Convalescent animals from city stables are frequently sent to farms for recuperation, and furnish a fertile source for dissemination. Agricultural fairs, horse shows and race meetings also afford excellent opportunities for the dissemination of this and other contagious diseases.

SYMPTOMS.—In common with other acute contagious maladies this is to be first recognized by the sudden rise of temperature, attaining in a few hours' time an elevation to usually 104° to 106°, occasionally reaching 107.5° F. or even higher. It probably offers the highest average temperature of all infectious diseases of the horse. The whole body surface and the mouth give a sense of intense heat to the touch. The pulse varies from fifty to seventy per minute in the earlier stages, increasing to one hundred and over, with the later advent of grave complications. With grave heart complications the pulse becomes rapid, weak and intermittent.

The effect upon the general nervous system is generally of a profound character from the beginning. The general consciousness seems lowered and the animal apparently suffers from headache, as evinced by hanging the head or resting it on the manger or other support. Locomotion is slow and unsteady, indicative of extreme nervous debility. As a further result of the nervous depression, the animal not infrequently lies down considerably in the earlier as well as later stages.

The visible mucous membranes are intensely injected, dark red, at times yellowish red and but slightly, if at all,

swollen. The sclerotic coat of the eye attains within a few hours after elevation of temperature a characteristic yellow, icteric hue which it retains usually for several days until the crisis is reached, frequently longer, extending over a week or two.

In relation to the enormously elevated temperature the appetite remains surprisingly good. In a few cases appetite is wanting, but generally a fair amount of food is taken with relish. The condition of the stomach and bowels depends largely on prior diet, which, if light and laxative, prevents generally any marked constipation or other disturbance as a result of disease. When, however, dry nutritious food in great abundance has been allowed prior to the attack, we may have in the earlier stages constipation or severe gastro-intestinal complications, evidenced by colic, and later in the disease, from the third to fifth day, profuse diarrhœa may supervene.

The urine is scant in early stages, surcharged with excretory products and bile-tinged. Later in the disease profuse diuresis is not uncommon. There is usually a somewhat frequent, short, hacking cough, modified somewhat by the character of the chest complications becoming largely suppressed in painful pleuritis and pleurodynia.

There is generally no nasal discharge at the outset, but in somewhat less than fifty per cent. of patients there occurs about the second to the fourth day a markedly characteristic, pathognomonic discharge, usually scant, occasionally abundant, of at first a watery character, semi-transparent, pale yellow or lemon color, later becoming thicker, somewhat opaque, darker yellow, almost the color of egg yolk, adherent to nostril where it dries to reddish brown scabs. In rare cases the discharge is abundant and continues for several days, and when abundant usually remains thin and transparent in character, mixed somewhat with flakes.

In other cases it is rusty-colored or dark red, due to admixture of blood; in others it is lighter colored, flaky, dirty grey and fœtid. The respiration depends upon two distinct factors, temperature and chest complications. It is markedly accelerated before chest complications are established and the latter influences it in the same manner as ordinary

pleurisy or pneumonia, thus furnishing every degree, from moderate acceleration to fatal dyspnœa. Thoracic pain is occasionally present, as shown by grunts emitted during expiration, from a sudden blow or during movements. This pain is at times pleuritic, at others pleurodynic.

The absence of chest pain is no proof of absence of extensive pleuritis. Dieckerhoff relates that in cases of unilateral pleurisy it not infrequently happens that the affected side of the thorax is tucked in and held as immovable as possible, while the opposite side is bulged out and takes upon itself increased function, thus making the two sides of thorax unequal, a condition best seen from above the animal's back.

Auscultation and percussion of the thorax, after a duration of twelve to forty-eight hours, or longer, reveals in a large proportion of cases more or less extensive pleuro-pulmonal lesions, differing mainly in case of pulmonary lesions, from ordinary pneumonia in the less completed hepatization, hence a less degree of dullness and greater persistence of bronchial respiration in the affected part. It not infrequently happens, however, that percussion and auscultation fail to reveal pneumonia, pleurisy or other thoracic lesions throughout the entire duration of the disease, a fact which renders the appellation of contagious pneumonia somewhat ambiguous.

The pneumonia and pleurisy offers a distinctive difference from the other pneumonias of the horse in that the patient generally shows a marked tendency to assume the recumbent position at frequent intervals. Few diseases of animals exhibit a greater variety of complications and sequelæ, in fact it seems that the pleuro-pulmonary lesions should be viewed rather as complications than otherwise, since in some outbreaks thoracic complications become almost the exception rather than the rule.

The symptoms we have noted as being constant are the high temperature, great depression and engorgement of the liver, as evidenced by the early and well-marked icterus. Following upon the common thoracic lesions we occasionally find hydrothorax, pyothorax, pleuritic adhesions, suppurating, chronic and encysted pneumonia, which add to other symp-

toms their individual characteristics which it is unnecessary to detail here. The peri- and endocardium are occasionally involved in the general inflammation of the thoracic organs, and frequently we have the more grave lesion of myocarditis with rapid, weak, intermittent pulse. Profuse diuresis occurs somewhat rarely after several days' duration of the disease.

A quite common sequel, usually after the crisis and during apparent convalescence, is the appearance of the so-called rheumatic inflammation of the sheaths of flexor tendons in metacarpal and metatarsal regions, and sometimes of the synovial membranes of the elbow, stifle, and at times other joints.

The patient's temperature has been normal, or about so, appetite good, appearance bright, and every indication of convalescence is present when suddenly it becomes excessively lame, refusing in many cases to put the affected member to the ground; if a sheath of flexor tendon is the seat of affection it swells rapidly, the parts become tense, hot, very painful to touch; when deep-seated joints are affected the objective signs are less manifest or absent.

When more than one limb is affected the animal remains recumbent most of the time, resulting in the early appearance of extensive bed-sores. The whole system becomes feverish again upon the appearance of severe lameness, and unless promptly relieved, rapid emaciation ensues. I have not noted suppuration of the affected parts, neither does the inflammation shift from one limb or part of limb to another, and after recovery I have not seen recurrence of the lameness. These facts lead me to believe it embolic, and not rheumatic as most veterinarians urge. Diffuse spinal meningitis occurs rarely at about the same stage of the disease as the so-called rheumatic inflammations, and presents symptoms offering no distinctive features from ordinary meningitis.

Dieckerhoff mentions in addition to the above sequelæ and complications, spinal paralysis, due to specific inflammations of aponeuroses of loins and hips, or diffuse infiltration of the spinal pia mater, pulmonary hemorrhage, inter-pleural

hemorrhage, hemorrhages into urinary apparatus, erysipelatous inflammations of extremities, and coincident infection with other contagious diseases; also ichorous pneumonia, relapsing pleuritis, suppurating pleuritis, pleuritis after pulmonary gangrene or ulceration, empyemia, specific ophthalmia and roaring.

The course of this disease and its duration necessarily depends much upon the varying complication, but it may be stated as a rule that the cardinal symptoms of the disease, when not prolonged by the occurrence of a grave complication, generally disappear in from six to ten days, the temperature becoming normal, the extreme nervous prostration disappearing, and the icteric hue of the sclerotica vanishes, indicating the resumption of normal hepatic functions. Some cases pursue an apparently abortive course, and convalesence occurs from the third to the fifth day.

Extensive pneumonia necessarily prolongs the disease, delaying convalesence eight to twenty days after the beginning of the pulmonary complication, or, becoming chronic, may extend the disease over several weeks or months, eventually leaving the animal more or less incompletely recovered. Hydrothorax may run a brief or chronic course. Pyothorax usually leads to early death, so also empyemia, meningitis, pulmonary gangrene and ichorous pneumonia. Severe myocarditis with intermittent pulse generally terminates fatally at the third to sixth day.

The symptoms, complications and sequelæ already enumerated, indicate to a great extent the character of pathological lesions as revealed by post-mortem examination. Following as closely as practicable their universality and importance, we find: first, a well marked enlargement of the liver, increasing its size very considerably. Its weight ranges from twenty to thirty pounds, is usually of a markedly yellow hue, the surface smooth and glossy, the capsule tense, apparently to the point of rupture, the parenchyma friable. In conformity with this condition, the entire cadaver is more or less deeply tinged with bile. The lungs show in most cases more or less extensive pneumonia, at first lobular in character, in more severe

cases its lobular features to some extent disappearing. The hepatization does not attain that completeness and solidity observed in other pneumonias, but the most solid parts frequently remain to a small extent permeable. In rare cases are found gangrenous spathes, hemorrhagic infarctions, suppuration.

The pleurisy of this affection offers especially the icteric hue of the inter-pleural exudates, and in general a want of adhesive bands between the two pleural layers. The peri- epi- and endocarditis offer but little of special interest. The muscular tissue of the heart is usually pale, flabby and friable, with, in severe cases, well marked hemorrhagic spots throughout the entire organ. The enteric complications offer after diarrhœa a diffuse muco-enteritis. The kidneys are pale-yellowish and friable, the pelvis occasionally containing a considerable quantity of thick, mucus pus. Other pathological lesions have perhaps been sufficiently indicated in our description of symptoms.

The diagnosis, as in many contagious diseases, may prove difficult in isolated cases, that is, in the initial cases in a neighborhood where a history of exposure is wanting. The chief reliance must be placed upon the sudden elevation of temperature without other explanation than infection, the profound nervous depression, and chief of all, the well marked jaundice as exhibited most clearly in the sclerotic coat of the eyeball. When nasal discharge is present its character is pathognomonic. The pneumonia of this disease differs widely from other pneumonias, in that the animal frequently assumes the recumbent position, and also an extension of the lung lesions may occur to an extent incompatible with life in the ordinary affection, and the animal retain a vigor which does not presage a fatal termination.

The prognosis depends almost entirely upon the complications. The temperature gives no indication of the probable issue. The pneumonia, even when affecting both lungs to an extent necessarily fatal in other pneumonias, is by no means a precursor of death in this affection, owing evidently to the less complete hepatization attained. Even when both lungs

are involved throughout their lower two-thirds or three-fourths, while the outlook becomes very grave, a fatal issue is uncertain. The same may be said of pleurisy and hydrothorax.

Increasing jaundice with prostration and inappetence lends gravity to the case. Diarrhœa, when not too severe, apparently has a beneficial influence on the termination of the disease. The same may be true of profuse diuresis. Peri- and endocardial complications possess their usual danger, and myocarditis, when sufficient to produce intermittency, is, so far as we have observed, fatal. Meningitis is nearly always fatal. Pyothorax, empyemia and pulmonary gangrene are fatal.

The amount, presence or absenee of nasal discharge possesses no prognostic value. The quality of the discharge may assist in leading to a safe conjecture of the result. A rust-colored ichorous discharge indicates generally a fatal issue, but a dark red or black (hemorrhagic) discharge without very marked fœtor, which presages death in ordinary pneumonia, while very grave, is not necessarily fatal in this affection. The inflammations of sheaths of flexor tendons and synovial membranes of joints sometimes recover promptly, more often require two or three months or even longer for the disappearance of the lameness and thickening. When the synovial bursæ of joints, such as the elbow and stifle become affected, recovery is slow and uncertain. Some recover in two or three months, while others remain permanently lame.

In case of two heavy draft mares coming under my care, affected in both the elbow joints and flexor tendon sheath, both remained recumbent so much of their time for five or six months, that in their emaciated condition they became covered with large and deep bed-sores. They both finally improved slowly, and one, after one year, the other after two years, began breeding again and recovered their general health, but remained slightly lame. After recovery these affections of joints and tendon sheaths, do not, in my experience, recur. A brief history of four fatal cases of this malady may be of interest.

No. 1. A well bred roadster gelding, age four years

weight about one thousand pounds, was noticed dull, with loss of appetite for a few hours only before examination. Temperature, 104° Fahr.; pulse, about sixty per minute; body surface hot; sclerotic coat of eye intensely yellow; visible mucous membranes injected and yellow; animal moved tardily as if weak, and lay down frequently and rested quietly on sternum; there was a short, partly suppressed, hacking cough; percussion of the chest showed all parts equally resonant, but appeared abnormally dull; auscultation revealed vesicular murmur in every part, with no sound characteristic of pneumonia, no pleural friction sound present, breathing slightly accelerated. Quinine in large doses produced no impression on the temperature, neither could any effects be noted from the use of alcoholic or ammoniacal stimulants, the animal appearing about the same as above recorded for a week, her breathing gradually becoming worse, but the chest still resonant alike all over, no evidence of thoracic pain, and the animal continued to assume the recumbent position a large part of the time. Death ensued about the eighth day. Autopsy showed universal pleuritis with enormous exudate of bloody serum, thickly mixed with fibrinous clots. The hydrothorax had been distributed over the entire pleural surface. The lungs were normal, except the slight collapse seen at lower border, the result of pressure from the hydrothorax. Heart and its coverings normal, heart contained a clot of fibrin. Liver greatly enlarged, estimated weight thirty pounds, bright yellow in color, the capsule smooth, shining, tense. The tissues of entire body tinged with yellow, otherwise healthy, except as detailed above.

No. 2. A four-year roadster mare of about eleven hundred pounds weight, belonging to the same owner and kept in stable with the above. Sickened about ten days after death of preceding; temperature, 106°; pulse, 60; appetite diminished but fair; breathing considerably quickened, pulmonary lesions pronounced. Treatment produced no visible effect on the course of disease, and at about the fourth day profuse diuresis set in, without diuretics having been administered, after which she rapidly failed and died two days later.

Autopsy.—Pleura normal, except one old adhesive band. Lungs inflamed throughout their entire extent, the right in gray stage, the left in red hepatization, all parts being imperfectly hepatized, and permeable, to a slight extent, to air. No gangrene. Liver enlarged, yellow, and presenting same general characteristics as above, but in less intense degree. Kidneys enlarged, hilus containing muco-purulent matter; spleen enlarged, remaining viscera normal.

No. 3. A three-year imported French draft mare, showed at outset the essential symptoms already described, the jaundice being especially notable. About second day of disease heart complications of a grave character were noted, the pulse being unequal and intermittent. The heart was stimulated with f. e. digitalis gtt. xv. every thirty minutes until action became regular, when doses were given less frequently, barely sufficient to maintain moderate regularity. To relieve the jaundice there was given aloes ʒi, hydrarg. chlor. mite. grs. xv., hydrarg. chlor. corrosiv. grs. ii., in pills twice daily for two days. The icteric hue of sclerotica promptly disappeared. Mare succumbed from heart failure the fifth day. Autopsy.—Pleural normal, lungs very slightly inflamed. Peri- and endocardium markedly inflamed. The muscular tissue of the heart was highly inflamed, soft and friable. Liver normal in appearance and size, apparently the result of hepatic stimulants administered.

The above were three fatal cases out of ten animals affected in a stable at Bloomington, Ill., where all were closely confined and highly fed to fatten for a public sale. The autopsy on No. 1 was made jointly by my partner, Dr. Alverson, and myself; the other two by Dr. Alverson, to whom I am indebted for the notes on all.

No. 4. An eight-year roadster, property of Dr. R——— Lafayette, Ind., had been sick some time without material loss of appetite, but showed considerable cough. The owner administered an aloetic purge which was followed by superpurgation lasting two days. A day later I was called, and arrived at the stable barely in time to see the patient fall dead. The cadaver was removed to the dissecting room at Purdue,

University, and an autopsy held. Right costal, visceral and diaphragmatic pleura much inflamed, with some serous exudate mixed with flocculent lympmph; costal pleura at one point showing a circular elevation eight inches in diameter, and one-eighth inch above surrounding pleura, a firm, lymph-like extravasation of a transparent, yellowish hue. The bowels showed severe general muco-enteritis, probably caused by the aloetic ball, and doubtless the immediate cause of death. The liver was swollen, the capsule tense, shining, pale yellow in color, and weighing twenty-one pounds.

No. 5. Called May 11th, 1892, in consultation with Dr. M. E. Knowles, at Terre Haute, Ind., to attend the three-year-old sorrel colt Electral, a highly bred pacer. Patient had been well up to May 6th, and was one of the last of a large stable of track horses to take the disease; had been very bad from first with rapid, weak, intermittent pulse, which gradually grew worse. At date of visit had an excessively fœtid nasal discharge, considerable in amount, dirty reddish in color, thin and mixed with flakes. He died at 4 A.M. the following day, and autopsy conducted by Dr. Knowles and myself at 10 A.M. Subcutaneous aponeurosis bile tinged, axillary veins filled with extremely black, feebly coagulable blood, muscular interstices show numerous ecchymoses. Diaphragmatic and costal pleuræ inflamed throughout, pleural cavity containing one quart dark yellowish brown, flaky exudate, bronchial glands enlarged. Right lung showing lobular pneumonia with imperfect hepatization at various points, and slight inflammation throughout entire extent, slight emphysema at upper border; left lung shows but little pleurisy, but numerous small lobules markedly inflamed. The pericardium was slightly inflamed; endocardium intensely inflamed, showing hemorrhagic infarctions; heart muscle pale, soft, friable, and showing ecchymosis. Stomach filled with deeply bile-tinged food, mucous membrane congested, mucous membrane of colon and cœcum inflamed; liver pale yellow, tumefied, capsule tense, shining, weight twenty pounds; kidneys hyperæmic, pus in hilus of left.

The mortality and loss varies greatly in different out-

breaks; in some the mortality falls to one per cent. or below, and the loss amounts practically to the loss of use of patient for three or four weeks' trouble and expense of treatment, etc., while in other cases the mortality mounts up to thirty per cent. or over. Seasons, heat and cold or age of animal appear to exert no influence on the mortality, but damp, changeable weather, which would naturally predispose to chest diseases, aggravate these complications. Thinness of flesh seems without prejudice, but excessive fatness, with high feed and scant exercise at date of invasion, is exceedingly baneful. Ordinary working animals, if promptly rested when attacked, withstand the disease best. On an average the mortality in the country and small cities may be placed at five per cent. or less with safety. In large cities with crowded stables it is evidently greater, Dieckerhoff estimating the mortality at fifteen per cent. in Berlin, while Friedberger and Frohner place the mortality at twenty per cent. to naught per cent.—usually at three and eight per cent. At all events, it may be said to be the most fatal of the class of diseases of the horse generally grouped together as having the type of influenza.

The period of incubation is not accurately determined, and is certainly not uniform. I have seen the disease appear as early as nine days, and as late as twenty days after exposure. What contact is necessary for transmission is also unknown, most cases being evidently due to intimate associations of healthy with diseased animals. Quite frequently in large stables an animal several stalls distant from the diseased one will contract the malady, while those in intervening stalls remain free. Usually part of the horses in a stable escape, sometimes as high as thirty to fifty per cent. resist its encroachments. Like most epizootic diseases it generally diminishes in virulence after existing for several months in a locality and finally disappears. It spreads slowly, and can probably be transmitted by the air for a short distance only. In one case two draft stallions, occupying a stable by themselves, contracted the malady, and both died, while the other horses of the farm, scarcely a hundred yards distant, remained

healthy. No records have been found of a second attack in the same animal.

The treatment has been one of uncertainty and of conflicting ideas. Dieckerhoff very properly remarks that lowering of the temperature is not essential, and also that cinchonidia, carbolic acid, salicylic acid, salicylate of soda, preparations of iodine, hyposulphite of soda, etc., are impotent as febrifuges in these cases. He recommends internally sod. bicarb. 75 and 120 grammes, with cort. querc. 40 and 60 grammes; also sod. or magn. sulph. in doses of 300 and 500 grammes; in other individual cases calomel in 2 and 3 gramme doses. For the pleuro-pneumonia he commends sinapisms, oil of mustard or croton oil with turpentine. In later stages he commends warm fomentations and poultices to the chest. For heart complications, he commends camphor, digitalis and valerian; diuretics he condemns. When suppurating pneumonia is threatened he recommends setons in the breast, and when pyothorax is evident he advises scarification of pleura by means of a trocar. For hydrothorax he advises the trocar.

Friedberger and Frohner likewise hold the control of temperature unnecessary unless in exceptional instances, when they commend phenacetin, antifebrin, antipyrin, digitalis, alcohol, ether and camphor; as heart stimulants, caffein, hyoscin and atropine subcutaneously. Like Dieckerhoff, they commend vesicants in chest complications; for hydrothorax, digitalis, alkalies, juniper berries, potassium acetate, and especially pilocarpine in doses of $\frac{1}{10}$ and $\frac{2}{10}$ grammes. For severe intestinal lesions they commend small doses of calomel (1.0 and 4.0 grammes), and for threatened lung abscess, inhalations of creolin, carbolic acid, turpentine, etc. Dr. Fleming strongly advises the administration of quinine, and in cases of threatened lung abscess or gangrene, carbolic acid.

All are agreed that proper hygienic conditions are of the first importance, the housing—if the habit of animal or kind of weather indicates housing at all—should be dry, comfortable, well ventilated. The food should be laxative, preferably green food, roots and bran. The control of the temperature is useless. I have seen cases with temperature of 104° to

105° go through the entire course of the malady without medicine, and do well. In one case I recall a newly imported French draft stallion with a temperature of 107.5° F. for a week going entirely without medicine, fed moderately during the entire time, and made a prompt and complete recovery. Quinine will not, as a rule, lower the temperature, even in very large doses. Phenacetin, acetanilid, etc., in full ounce doses, bring temperature down to near the normal, but only temporarily, and apparently exert no lasting beneficial effect. The effects of alcoholic stimulants are not readily discernible.

Why the enormously engorged and passive liver should be so completely ignored in the therapeutics of this malady is more than I can understand. The icterus is certainly the most constant symptom during the life of the animal, and hepatic engorgement the most complete lesion found on autopsy. To the end of relieving this condition I have used in a few of our most recent cases, with apparent benefit, aloes ʒi, calomel grs. xv, and corrosive sublimate grs. ii, in pill twice daily for two days, or until bowels respond or icterus diminishes. Other hepatic stimulants can doubtless be used with equal promise, or possibly would prove even better, such as podophyllin, muriatic acid, etc. In lung and pleural complications in our experience, vesicants to sides of thorax rarely do good, but frequently do harm by causing the animal great agony and consequent restlessness.

Hot fomentations, poultices, or a mild stimulating or anodyne liniment well rubbed into chest and covered with a woolen blanket, has, in our hands, proven equally serviceable and less dangerous. In hydrothorax 1 and 1½ grs. pilocarpin hydrochlor. hypodermically, seems of special value. This failing, the trocar should be resorted to. In other cases, where no applications are made to the chest, the animals appear to do fully as well. In inflamed tendons, sheaths and synovial bursæ, we have found best results in earlier stages from the application of a mild liniment, with aconite and chloroform as essentials; later, stimulants or vesicant applications may be made with benefit.

The prevention of the spread and the extirpation of this

disease should be undertaken on those lines applicable to contagious diseases in general. When the disease is recognized in a stable, the affected animals should be promptly removed, and the stable thoroughly disinfected, close watching being maintained for new cases. Thorough ventilation tends to lessen the virulence of the contagion. Public stables where the disease exists should be thoroughly disinfected, and diseased animals properly isolated, or the stable closed to transient animals. Careful feeding on light laxative diet, with light work or exercise, taking especial care not to work the animal after the development of the disease, will do much to modify the severity of the attack. Convalescents should not be allowed to mingle with unexposed animals until after five or six weeks, and not even then should traces of the disease remain manifest. Animals known to have been recently exposed to the disease should not be allowed in close contact with other horses at fairs, horse shows, race meetings, and at other places where large numbers of horses congregate. When the disease breaks out at such places, the affected animals should be isolated as carefully as possible, and the exposed animals closely watched. Its control by protective inoculation has been attempted, but so far without being rendered practicable, although, as would be expected, a degree of immunity has apparently been attained.

REPORTS OF CASES.

RESULTS OF THE OPERATION FOR ROARING.

By C. H. Pierce, V.S., and J. S. Butler, V.S., Minneapolis, Minn.

The gelding G.B., with a record of 2.20¼, the property of H. N. Seelye, Esq., of this city, that we operated on January 30th last for the cure of roaring, started in his first race here on July 4th in the 2.21 class and won the race in three straight heats in 2.24½, 2.21¼, 2.21, without roaring or being distressed, and although short of work owing to the wet season.

He started again on the 7th in the "Free-for-all trot," and got second money, driving Phœbe Wilkes out in the second

heat in 2.20¼, but could have won the race if they had not been afraid of lowering his mark. He is at present trotting in the Montana Circuit.

We operated on St. Omar (a running horse by St. Blaise, dam Olitippa, by Leamington) on June 30th; he was a bad roarer, making quite a noise while walking. He can trot and gallop slowly now without making a sound, and is, to all appearances, O.K.

EXPERIMENTAL PATHOLOGY.

EXPERIMENTAL OBSERVATIONS ON THE LIGATURE OF THE HEPATIC ARTERY.

By N. de Dominicis.

The ligature of the hepatic artery would necessarily be mortal; it stops the glycogenic function of the liver, (Arthand and Butte). The author renews the experiments. He observes that all animals subjected to the ligature of this vessel, with or without biliary fistula, live perfectly well. They eat, and digest well, and get fat. In a few, and only in the first days after the operation, sugar is found in the urine; after the ligation of the artery, a supplementary, anastamotic circulation is formed by branches of the coronary, mesenteric, mammary, epigastric, phrenic, spermatic, etc. The blood of the portal vein is, however, sufficient for the nutrition and the function of the organ.—*Rev. des. Sc. Med.*

ANATOMICAL CHANGES FOLLOWING THE REMOVAL OF THE PANCREAS IN DOGS.

By G. Boccardi.

The author has investigated subjects killed from the second, third, fourth, fifth and ninth days after the operation, to two months and a half. In the ten dogs upon which he performed the operation, he observed: 1st, constant loss of flesh, more or less marked, even when the animals received an abundant diet; 3d, slight microscopical alterations in the digestive canal; only a more or less marked anæmia; an

œdema of the subcutaneous coat, with dilatation of the lymphatic vessels; and in some cases, vascular alterations. No atrophy of glands, or increased activity of these organs (salivary, buccal, œsophageal or gastric, of Brunner). The glands of Lieberkuhn, in one third of the cases, were hypertrophied in the duœdenum; but this condition, according to Martinotti, is always present. But it has no part with the loss of the glycolytic function of the pancreas, as the animal remains glycoturic.

The liver is always altered, with fatty degeneration. The hepatic cells are altered, their protoplasm is reticulated, and in old cases, the atrophy is well marked. The kidneys are normal, sometimes there are cortical lesions. The special swelling of the epithelium of the tubes of Henli, mentioned by Armanni, and seen by Pirenti, were not observed by the author.

The central nervous system presents interesting alterations. After from seven to twenty days, there are varying unsystematical lesions of the pyramidal and of the origin of the posterior roots. The alterations of the grey substance are more marked, consisting in cellular atrophy, or degenerations in the anterior and posterior corunæ, with small hemorrhagic centers around the central canal; and with that, in some cases, syromyelitis of the lumbar segments, and gliomatosis of the dorsal. The cœliac ganglion presents atrophic cells.—*Rev. des. Sc. Med.*

POSITIVE INOCULATION OF TUBERCULOSIS WITH THE FŒCAL MATTER OF PHTHISIC.

By Solles.

1st. Solles inoculated two guinea-pigs with the testicular juice and the sperm of a phthisical individual. In the first animal, the inoculations made with the testicular juice gave negative results; in the second, inoculated with the sperm taken from the vesicula seminalis of a phthisical man, he observed the following lesions:

The center of inoculation had become enormous, and the

ganglions of the axilla were almost in the full caseous evolution. The spleen, liver, and hypertrophied lungs were filled with miliary points; at the base of the heart and the hilus of the liver were seen true lymphatic glands, of new formation.

2d. Solles also inoculated six healthy guinea-pigs with fœcal matter, containing numerous bacilli of Koch, which he obtained from a patient suffering with pulmonary lesions, but without enteritis. In two pigs the inoculations were made with matter diluted in phenic acid, at twenty-five per cent. In these the infection did not take place, only a small indurated point appearing at the place of inoculation, which after acting as a local tuberculosis, disappeared. It is probable that if the phenic acid did not destroy the bacilli, it interfered with its germinative power.

Two other pigs were inoculated with the matter diluted in boiled water, and warmed to 65° C. In these cases the results were also negative, showing neither local nor general infection. The last two received inoculations of the fœcal matter simply diluted in sterilized water, and the result was positive, the liver, spleen, lungs, etc., presenting unmistakable lesions of tuberculosis.—*Rev. des. S. M.*

TUBURCULOUS INOCULATION IN THE DOG.

By Hericourt and Richet.

In experimenting upon various animals, and especially upon monkeys, it has been possible to protect them against human, by an inoculation of aviar tuberculosis. But these attempts were more successful upon dogs, which are nearly refractory to the latter, but very susceptible to the first; inoculation is then evident. Indeed, two dogs which had about two months before received intra-venous injections of aviar culture, having been inoculated by injection through the saphena of human tuberculous culture, lived and remained healthy four months after, while the other dogs, inoculated with the same culture, but without anterior aviar injection, died in twenty days. This gives a hope that among the various tuberculous bacilli may be found varities which will bring on inoculation.—*Rev. des S. M.*

EXTRACTS FROM FOREIGN PERIODICALS.

(Translated from German Papers by Richard Middleton, D.V.S., Philadelphia, Pa.)

VALUE OF MALLEINE.

From the results of our experiments we consider it impossible to successfully refute the statement concerning the specific action of malleine upon horses affected with glanders. Though administered to healthy horses and to others afflicted with diseases other than glanders, these failed to manifest an advance in the temperature.

Before entering more minutely upon a description of the symptoms provoked by injections of the virus in glanderous equidæ, we wish to state, respecting the reaction of temperature, that we have only taken notice of increase of at least 1° C., when making up the several tables given in our experiments. Besides the augmentation of the body temperature following the inoculations, the afflicted horses evinced decreased cerebral activity, together with accelerated pulse and respiration. A few horses exhibited faintness after the treatment, and a more or less complete loss of appetite. The alterations which appeared upon the point of insertion of the needle were unusually variable. In most of the cases there formed an inflammatory swelling the size of a hen's egg, which in the following days disappeared.

In other cases the local reaction of the virus upon glanderous animals seemed more prominent (since malleine is an inconstant preparation respecting its chemical composition, the variations here noted may be referable to this fact). The principle clinical symptom, the fever, as we have repeatedly emphasized, happens in glanderous horses immediately after the injection. An apparent exception to this rule was seen in No. VIII., which we treated three times with malleine, and which gave the fever reaction only after the third injection.

Upon section of this animal we discovered an old glanderous nodule in the lungs. The experiment of inoculating a guinea-pig with this nodule gave a negative result; since,

however, in the majority of cases where such old nodules have been used in confirming the disease, the result has been unsatisfactory, we can attach no importance to this instance, which rather proves, than otherwise, the rule.

Again, in horses Nos. XXXI. and XXXV., the variation after the administration of the virus was not as expected, though the increase actually happened, yet it was within the limit of normal variation. All other horses used in these experiments gave positive results.

The interim between the injection and the appearance of the rise in the temperature, in no two cases was precisely the same. In one case of acute cuticular glanders the afflicted horse manifested the change within four hours after the application of the glanders lymph, while in another patient suffering pulmonary glanders the change was first visible twenty hours later. On an average, however, we may expect the augmentation nine and one-half hours after the introduction of malleine.

This discrepancy may have been due to the variable quantity of the active principle present in the lymph injected. The duration of the elevation we determined to be more constant, reaching its maximum in from six to four hours and thereafter gradually declining. The operation of malleine is analogous to that of taberculin, in that the structure acted upon is immediately adjacent to the nodules, or it is the nodule itself. The red zone surrounding the pulmonary and splenic nodules, as shown by post mortem, is due to the inflammatory effect of the malleine.

In one case, No. VII., the ulcerous wounds upon the pituitary mucous membrane diminished in size, but in other cases where no visible glanderous symptom was evident, the same appeared in a few days.

In closing our report we desire to offer a few suggestions upon the practical application of malleine injections. The dose is dependent upon the degree of concentration of the lymph; on account of the changeable composition of the lymph it seems advisable to first try small quantities—ʒss—upon a known glanderous horse, afterward regulating the dose accordingly.

When possible, it is better to note the temperature previous to the inoculation; this is, however, not indispensable, since we cannot tell, exactly, the limits of normal variation. An absolute necessity is the recording of the deviation after the administration of the malleine to animals having pyrexia. Two hours after the injection the temperature should be taken and must be regularly continued thereafter for twenty hours; if for any reason the record cannot commence just as here prescribed, then the variation from the tenth to the sixteenth hour may be assumed as of capital importance. For the confirmation of glanders when occult, two inoculations are made necessary, and, indeed, should there be the least doubt after the second injection, the third must be made, using one half as much more malleine for this as for the first two administrations—this increase in dose is warranted on the supposition that the bacillus becomes inured to the influence of the virus. The immense value of malleine as a diagnostic agent, applicable to the developement and discovery of occult glanders, must be apparent, from these trials, to every thinking member of the profession. The destruction of all suspiciously afflicted animals no longer becomes a necessity in large stables. In malleine we have the hope of ultimately annihilating glanders by extinguishing it in its incipiency. Sanitary police has this year chronicled that which previous generations have conscientiously striven to accomplish for years.—*Berliner Wochenschrift.*

TOXIC EFFECT OF BEE-STINGS UPON HORSES.

Two horses were halted in the vicinity of an apiary, which for some unknown reason became the settling-ground for thousands of bees, which inflicted innumerable stings. The frenzied animals could not be approached, and as a result they continued to be the object upon which the multitude of small insects vented their wrath. After repeated attempts to detract their attention from their victims, we finally succeeded by throwing buckets of water upon them, and cutting the traces of the harness.

The first horse exhibited a much swollen head of a ridiculous and irregular appearance. The whole region adjacent to the sacral vertebræ was occluded by large swellings. From the nose and mouth there flowed a blood-colored discharge.

Respiration difficult and noisy, pulse small, nearly imperceptible and numbering one hundred beats per minute. The patient continued to show irrational symptoms, through the violence of which he fell many times to the ground. One hour after, the animal was utterly unable to stand upon the feet. Rectal temperature registered 104.3°Fahr.; breathing continued dyspnoeic. The blood as drawn from the jugular vein possessed a cherry brown color. After five hours death relieved the intense sufferings.

In the second horse the symptoms were less aggravated and pain less intense. Eight hours later the tumors had, to a small extent, increased in size, but the sedative effect upon the heart had somewhat subsided. In this case bloody discharge from the nose and mouth was also recorded, as well as small quantities of bloody urine. This patient succumbed fifteen hours after the attack.

Upon post mortem numerous dark spots were observed upon the under side of the skin, varying in size from $\frac{1}{6}$ to $\frac{2}{3}$ of an inch in diameter. The subcutis was infiltrated with a yellowish brown gelatinous substance, which coloring also penetrated the superficial muscular layer. Those muscles lying directly beneath the latter, however, were very pale, resembling those parts in horses having died of hæmoglobinuria. On the head, anus, and vulva the subcutis varied from a dark brown to a black hue, and from here, as from the connective tissue of the subcutis in general there escaped a bloody serum. Especially in the second horse these regions exhibited a gangrenous appearance. Among the abdominal organs the spleen seemed most to suffer a change; the pulp of this organ was double its physiological dimensions, rendering one liable to mistake the same for anthrax; the spleen was much harder in consistence than in anthrax; kidneys somewhat enlarged and hyperæmic; the mucous membrane lining the pelvis of the organ in the same condition. In one patient

the stomachic membrane diffusely reddened, and in the abdominal cavity about a quart of reddish serum. A portion of the pleura in this animal discolored, and a portion injested. In the pleural cavity a liter of reddish serum, and upon the membrane covering the lungs, dark brown spots of diminutive size. Upon transverse section of the lungs these spots were also visible, and were of the nature of hæmorrhagic infarctions. Both surfaces of the pericardium were reddened and opaque. External and internal surface of the heart discolored by extensive ecchymoses.

Pia mater intensely red, and vessels ramifying beneath somewhat congested. From one and a half to two drachms of bloody serum was secured from the ventricles; considerable of this same fluid escaped the occipital foramen upon decapitation. Very few blood corpuscles found in the urine.

According to Frohner, the poisonous substance of the honey bee is constituted by a mixture of formic acid and a poisonous ptomaine. Acetic acid, which is closely allied to formic acid, induces symptoms similar to those just enumerated—Frohner obtained this result with acetic acid injections in a goat. Acetic acid, when incorporated with the blood, produces hæmoglobinuria. On the other hand, some of the symptoms recorded seem to indicate their source as ptomainic.—*Monatsh. f. Thierheilk.*

DIABETES IN THE DOG.

The literature of veterinary science has recorded diabetes only in horses, cattle. dogs, cats and monkeys.

Frohner has personally had the opportunity, within the last decade, to note five cases of diabetes mellitus in the dog. The last two of these were seen in November of last year, and were brought to the Berlin polyclinic for small animals, attached to the Royal University of Prussia.

The first dog, a small six and a half-year-old poodle, had shown abundant urination a period of four months back, and had in spite of inordinate consumption of food, continued to emaciate; at the same time the patient experienced great thirst.

According to the history, these symptoms were observed for some time previous to the failing sight, which determined the owner in bringing the animal to the hospital.

As a result of his examination, Frohner makes the following report: dog exceedingly emaciated, the more prominent portions of his osteology protruding; visible mucous membranes anæmic and of a whitish-yellow hue; rectal temperature 102.5° F., pulse 120-140, irregular and weak; action of the heart strong, but insufficiency indicated by the rushing sound subsequent to the first heart-note. During the days immediately after admission, the appetite poor but soon returned. On an average two quarts of liquid—water or milk—were consumed each day. Large quantities of pale straw-colored urine escaped the patient; the odor of the same was not unlike chloroform, of acid reaction, and, as evidenced by the tongue, possessing more or less saccharine matter. Specific gravity, 1055. Fehling's test and the polariscope indicated the amount of grape sugar to be 4.9 per cent.

Gait of animal sluggish. In each eye the lens of a gray tint, which upon closer investigation emanated from radiating bars of opacity (cataracta diabetica). After a few days the appetite diminished, and later totally disappeared; masses of disgusting food and water were irregularly vomited. As the meat diet was persevered in, the quantity of sugar in the urine contracted. Desuetude became notably stronger from day to day, and the subject finally entered a state of insensibility (coma diabeticum) during which the rectal temperature sank below normal. Death came two days later while in a comatose state.

The post-mortem revealed intense hypertrophy and discoloration of the liver. This organ, as exhibited by the microscope, was infiltrated to a well-marked degree with fat globules. Besides these lesions, the kidneys were the seat of a slight parenchymatous inflammation; the stomach and intestines were in a catarrhal condition. In the heart he located a long-standing insufficiency of the mitralis and bicuspidalis valves. On the remaining organs, especially of the abdominal cavity, inclusive of the sympatheticus and its branches, no alteration of note could be registered.

The result of an analysis undertaken immediately subsequent to the animal's demise, the single organs contained the following percentage of sugar: Liver, 0.10. Kidneys, 0.013. Muscles, 0.0066. Bile, 0.023. Blood, 0.06. Brain and spinal cord, 0.02.

The latest case of diabetes mellitus determined by Frohner was in a thirteen-year-old male skye terrier, which, according to the owner, had passed abundant urine for three weeks, and had throughout this period continued to progressively emaciate, grow listless and to suffer from diarrhœa. The stomach retained no food, and eating materially depressed the patient. The examination, as described by Frohner, found the animal in a badly nourished condition, schneiderian and stomatic mucous membranes pale; rectal temperature, 98.9° F.; pulse, 120, small and wiry. Consumption of solids small, but large quantities of water taken. Palpation of the posterior body, subject manifested tenderness of the epigastric region and enlargement of the liver. Feces thin in consistence, foamy and very offensive. Urine pale yellow color, containing albumen and 3.9 per cent. of grape sugar. Animal disinclined to move; cloudiness in each eye, with well defined radiating opacity. A small abscess upon the cornea of the left eye is remarked. During the following night the patient died, but the owner declined to permit a post-mortem to be held.

According to Frohner, the frequency of this disease is not great, and may be limited to one in every ten thousand animals admitted to the hospital. The symptoms of diabetes in canidæ are precisely similar to those in man, with the exception that in the human patient the course is slower and less fatal. Of the two cases just described, the post-mortem is specially remarkable, in that the liver was almost exclusively the only organ pathologically altered. From the intensity of the hepatic disease we are led to assign more or less of a relation and dependence of diabetes mellitus upon a deranged liver.—*Berlin Th. Wochensch.*

SARCOMA IN EQUIDÆ.

On the nineteenth of January, a small, hard and painful swelling appeared upon the off side of a draught-horse, be-

tween the eighth and ninth ribs. This at first was the size of an egg, but in three weeks' time it had assumed startling dimensions, approaching in size a child's head. The general health of the animal was in no way influenced thereby. Pain increased upon pressure over the thoracic region, and considerable œdematous swelling increased the girth of the patient by settling along the sternum. The swelling upon extirpation weighed three pounds, and contained in the center, surrounded by a tenacious connective tissue capsule, a collection of suppurative products. After the lapse of six weeks, the surface formerly covered by the tumor had become much smaller, and upon the circumference of the same small globules or growths of granular tissue commenced to flourish.

The animal was killed as useless, and upon the post-mortem, ragged collections were discovered upon the peritoneum and upon the pleura; adhesions between the diaphragm, liver and omentum were also visible. Microscopic examination of this growth exhibited its malignant character.—*Ztsch. f. Vet. Kunde.*

INTERNAL HEMORRHAGE OF THE AORTA.

A horse that had been bought four days previous, was, together with an another, hitched and used for hauling wood from the forest. The animal slackened his pace after going a short distance, and soon declined from sheer weakness to aid in drawing the vehicle. After standing ten minutes in quiet, the start was again made, with the same result, together with the addition of difficult breathing, so that it was considered best to unharness the animal. Three days later this same horse was put to a light wagon, and soon developed the same symptoms as before, only to a more aggravated extent, even falling and remaining down several minutes.

After a most exhaustive examination, we found the patient apathetic, rapidly changing the weight upon the posterior limbs, and raising the front feet a *good* distance from the pavement. All visible mucous membranes anæmic. Appetite continued, but food eaten very slowly. All movement slow and burdensome. Respiration somewhat accelerated, but

unaccompanied by any sound indicative of pulmonary disease. Temperature, 99.5° F.; feces and urine normal. We diagnosed the case to be one of anæmia. The horse died the next day.

Post-mortem showed paleness of the general muscular system; in the cavity of the abdomen an immense blood clot, but no alterations. As the cause of this hemorrhage a deformation of the third dorsal vertebra was recorded. Right and left upon the body of this member of the spinal column, a considerable exostosis had grown, in such a manner as to almost completely envelop the posterior aorta in an annular growth. This deposition was of a very bony nature, possessing an interior of porosities similar to ordinary cancellated tissue, and an exterior not unlike a mulberry calculus. The aorta had apparently been abraded and pierced by the roughness of this osseous band, for several small apertures were exposed, from which, no doubt, intravitam, blood continually escaped.

From the various strata, of different colors, to be distinguished upon the transverse section of the coagulated mass, one would be led to suppose that this escape had been spread over an extended period of time.—*Badische Thierarztl. Mitth.*

CREOLIN THERAPY IN SCAB.

We were notified shortly that in the district of Homberg, which comes under our supervision, there were two herds of sheep supposed to be afflicted with scab. As a result of the careful investigation at that time undertaken, we found the animals suffering not alone from dermatocoptes communis, but also from sarcoptes squamiferous, which latter had gained a hold upon half the lambs. The disease involved the lips, ridge of the nose, and ears; it was thickly spread over these respective regions, especially the latter, which were stiff and hard from the agglomeration of serum and desquamated epithelium. Both flocks contained the scab to such an extent —more than ten per cent.—that it was deemed advisable to bathe the whole. This was left to us. During the first eight

or ten days we prescribed the animals to be treated with a salve composed of equal parts of creolin, anglicum and sapo viridis. Later, a two and a half per cent. solution of creolin came into use as follows: After the animals, including the lambs, had been left two to three minutes in the tank, they were removed to another vessel, where they were drained, and where the ears, lips and nose were dampened with the above solution, and the scabs removed by means of a stiff brush. After an interim of eight days we visited this farm again, and applied the same process of bathing; at this time only a few of the head scabs were noticeable. We again examined these sheep at four or eight weeks respectively, but found no trace of the scab.—*Ber. Th. Woch.*

ANGINA DIPHTHERITICA IN CATTLE.

On the first of April, two cows became sick on a certain farm of an affection possessing a striking similarity to foot-and-mouth disease, and which at that time generated the suspicion that this dreaded plague gained a footing. On the day following the symptoms were present in a better marked degree, and the mouth was continuously opened and closed. In the laryngeal region and intermaxillary space, the animals manifested pain upon pressure. Raw food remained untouched when put before the patients, and they consumed small quantities of nutritious fluids only, with pain. The cattle had pyrexia.

Besides these two animals, four other cows were kept in this stable, three of which were removed a greater distance from the afflicted; one, however, a small heifer, which had been allowed to stay in the vicinity of the suffering animals, became sick the next day. The therapy consisted of inhalations of hay tea, to which a few minims of creolin and oleum terebinthina had been added; application of an epispasticum over the laryngeal and parotid region, and of a drink composed of dilute acidum hydrochloricum in wheat water. The stalls were disinfected. On the fifth day, respiration more difficult, and accompanied by a wheezing, not to say roaring

noise; fever higher, nasal discharge exceedingly offensive, brown, and mixed with shreds of desquamated mucous membrane; petechiæ upon the schneiderian membrane; a light hemorrhagic diarrhœa shortly appeared.

In great weakness and distress the cows expired at the end of the ninth day; the young heifer following upon the twelfth, after contracting the disease. The post-mortem, which was undertaken eight hours after the demise, revealed the following interesting changes: Upon the lining membrane of the small intestine and uterine cavity, small patches of a diphtheritic formation; larynx punctated with diphtheritic ulcers. The stomatic membrane was discolored, and appeared to have been eaten by a violent caustic. An extensive lobular pneumonia, consequent upon the settling of dislocated shreds from the epiglottis into the trachea and lungs. All three animals exhibited the same alterations.—*Woch. f. Their. u. Viehz.*

THERAPEUTIC NOTICES.

For tympanitis of cattle colchicum tincture has come into very general use, even in small doses it seems efficacious. As opposed to ammonia and ether it possesses the advantage of not injuring the flesh of the animal. Should death supervene before medical assistance arrive, the flesh of the animals having received either of the latter medicines is not useful since the meat is, to a greater or less extent, flavored therewith. In the administration of tincture colchicum this disadvantage is avoided. It is recommended to give five or six drops in water every ten minutes; other practitioners advise ʒ ij, ʒ iij every hour or two.

Siebel has used europhen in thirty cases of scalds and burns, in the form of an unguentum; he has always secured therefrom rapid and perfect healing. This agent operates by diminishing the secretion and pain. The salve is of a three per cent. strength, and is as follows:

℞ Europhen, ℈ ijss,
Ol. Olivæ, ʒ jss,
Vaselin, ʒ ij,
Lanolin, ʒ i,
M.

Europhen has also lately been urged as a substitute for iodoform.—*Klin. Woch.*

For cracked hands, as a permanent curative composition, as well as an ointment to be used before undertaking any operation, the *Therap. Monatsch* offers the following:

℞ Mentholi, gr. jss,
Saloli, ʒjss,
Ol. Olivæ, gtts. xxv,
Lanolin, ℥iss,
M.
Sig.—Apply t. i. d.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The regular meeting of the New York State Veterinary Medical Society was held at the Vanderbilt House, Syracuse, N. Y., July 14th, 1892.

Owing to the unavoidable absence of President Huidekoper, Dr. Jno. Wende, Vice-President, occupied the chair, and called the meeting to order at 10 A.M.

The roll call by the Secretary showed the following members present: Drs. Jno. A. Bell, W. L. Baker, Chas. Cowie, J. M. Chase, O. B. French, Geo. Gowland, Wilson Huff, N. P. Hinkley, E. D. Hayden, E. B. Ingalls, C. D. Morris, Wm. Machan, L. A. Robinson, D. K. Seltzer, Jno. Wende, L. E. Willyoung, J. A. Genung, A. H. Ide, R. A. McLean, A. Drinkwater. Several members came in later in the day.

Dr. R. A. McLean explained to the Society the cause of President Huidekoper's absence, saying that he was called to go with his regiment to Homestead and that his professional duties while there made it utterly impossible for him to attend the meeting.

Dr. Jno. Wende then read his paper on the "Treatment of Scabies."

Dr. Hinkley, I think Dr. Wende's paper a very good one and ought to bring forth an interesting discussion.

Dr. Morris.—I move that the paper be laid over for discussion until later in the meeting. Seconded by Dr. Machan, carried.

The reading of the minutes of the last meeting were dispensed with as they were published in both of the veterinary journals of the State.

Dr. McLean.—I move that the minutes of the last meeting as published in the AMERICAN VETERINARY REVIEW and the *Journal of Comparative Medicine* be accepted and passed on. Motion seconded and carried.

Dr. Wende.—The Board of Censors will now receive applications for membership. The following applications were acted upon by the Board of Censors:

W. E. Stocking, V.S., Eagle Harbor, N. Y.; Edward J. McLean, V.S., Buffalo, N. Y.; Jas. A. Rendegrast, V.S., Phœnix, N. Y.; Lewis I. Palmer, V.S., Scottsville, N.Y.; Geo. J. Gangloff, D.V.S., Buffalo, N. Y.; E. H. Nodyne, V.S., Sodus Point, N.Y.; Jas. McKee, V. S., Stapleton, S. I.; Sam'l Somerville Jr., V.S, Buffalo, N.Y.; Wilson S. Carlis, V.S., Carthage, N, Y., and G. G. Dean.

Dr. Wende called the meeting to order, and Dr. McLean introduced Dr. Roberts, a medical man, who was accorded the floor and delivered a very interesting address to the members, reciting some of his experience with tuberculosis during the past few years, saying that he received an inquiry some two years ago regarding Koch's treatment, and he wrote a criticism which appeared in the Chicago *Inter-Ocean*, at the time. He said that 90 per cent. of the profession claim that tuberculosis is produced by a germ, while he knows it to be a fact that it is communicable between animal and man.

Speaking of the quarantine on cattle in Massachusetts going to Maine and New Hampshire, he said that every animal must have a veterinary surgeon's certificate before being allowed to leave the State of Massachusetts. He also said that in Syracuse there were two hundred deaths from consumption in the year of 1891. He thinks consumption is caused by tuberculosis from animals, and claims that people who are susceptible to consumption will take it from the dust

of the spittle of the animal. In the New England States more people have consumption than in other States because they are taken from school at the age of fifteen years and placed to work in factories where they are compelled to breathe the dust which causes this fatal disease.

By referring to the statistics of the different States you will find that the death rate from this disease decreases as we go west and south, while in some parts of New Mexico people have been cured after residing in the climate for a time, the air down there being pure enough to cure meat when hung out doors.

Dr. Hinkley.—Do they have tuberculosis in cattle in New Mexico?

Dr. Roberts.—No.

Dr. McLean.—I found that steers coming from the west or south were comparatively free from tuberculosis, while in the New England States at least 33⅓ per cent. were affected. During 1886 and '87 there were three times the number of deaths from tuberculosis than of any other disease in New York City. I know of one family who were said to be suffering from consumption, caused by using the milk from a pet Jersey cow that had tuberculosis. I think people who are susceptible to consumption are liable to have it by using milk from a diseased cow. A bill was brought before the legislature regarding this matter, but when brought up for action was not acted upon. I do not believe there is any pleuro-pneumonia from Virginia to New York now, since it was stamped out a few years ago. Dr. McLean then cited his experience in this matter.

Dr. Roberts.—According to the report of the city Board of Health of Boston, the number of consumptives are less, while those suffering from bronchial troubles are increasing. I think the Government ought to take the matter in hand.

Dr. Morris.—I find that out of ten head brought in to be slaughtered, five or six will be found suffering from tuberculosis and that they are mostly from the east.

Dr. Jno. Wende.—I make a motion that the members of

this Society tender their thanks to Dr. Roberts for his very able and interesting address. Seconded and carried.

Dr. Roberts.—I find in my travels through the New England States that 75 per cent. of the population are suffering from consumption. These people would be glad to leave this part of the country for the west and south, but as they are a working class without money they are unable to do so. I represent an aid society established for the purpose of assisting these people and would be pleased to receive any offerings that might be made.

Dr. McLean.—I think that in the office where Dr. Morris is located they are able to stop the sale of cattle affected with pleuro-pneumonia, but cannot stop the sale of those affected with tuberculosis.

Dr. Morris.—That is so, but I think the Government will take the matter in hand.

Dr. Robinson.—I found a case where the animal had tuberculosis and the affected parts weighed twenty pounds or more. I gave it to the Health Commissioner of Buffalo, who has it preserved. I am told that this class of meat is cooked and eaten by the Pollacks of Buffalo.

Dr. McLean.—I do not think there is as much danger in diseased meat as there is in milk from a diseased cow.

Dr. Hinkley.—We are discussing diseased meat, which is always cooked before use, thereby avoiding the danger to a certain extent, while milk is generally used in its natural state. I think the milk ought to be boiled at all times to destroy the bacilli as far as possible.

Dr. Morris.—The medical men recommend the use of condensed milk to avoid the dangers of bacilli.

Dr. Wende.—The Secretary will please read the names of the applicants for membership who have been accepted by the Board of Censors. All whose names have been given were accepted.

Dr. Robinson.—I move we make the gentlemen members of our Society. Carried.

Dr. Wende.—Any unfinished business?

Dr. Morris.—No.

Dr. Wende.—We will listen to report of the Committee on Arrangements.

Dr. Hinkley.—As a member of that committee, would say we made the best arrangements we could.

Dr. McLean.—I move the report be accepted and committee be tendered a vote of thanks. Carried.

Dr. Wende.—The Committee on Publication please report.

Dr. Hinkley.—I will include the report in my annual report, and hope the Secretary will be excused from acting on all committees in the future.

Dr. Wende.—Committee on Legislation please report.

Dr. Morris.—The Committee has reported from time to time. I hoped to be able to furnish some new reports regarding this matter, but am unable to do so. It was a hard task to get the bill before the members of the Legislature. The more the question was brought before them the more they were found to be in favor of it. I found the most opposition was from Dr. Goldberg, member of Assembly, who asked if we could find among the profession of this State men who were able to dictate to the balance of the profession throughout the State. But the main objection was want of money. Mr. Duffy wanted $500 to pass the bill through, and we failed because we did not have the money to give them. I think if we cannot get it in this State we can get it from the United States, as all western States have better laws in this matter than we have in New York State. I think we can do more in a higher authority and get more than in the Legislature of New York State. No matter how small an amount we asked for it would be refused on general principles, in not passing it before. We have schools that are qualifying men in a course of one year. These schools ought to be done away with.

Dr. Morris offered the following resolution:

It being the object and desire of this Society to lend its influence and individual energy to promote the best welfare, to build up and sustain the highest standard possible in our honorable profession, to watch with jealous care the approach

of malicious influence emanating from societies or institutions which are holding out inordinate inducements to men of limited education, claiming to thoroughly equip and place them before the public in an acceptable manner upon short time as qualified veterinarians—the tendency of which only drags down and degrades the character of the profession, and that we believe the standard should be made higher and more uniform in character, and which we believe would be effectual only through centralized authority. Be it

Resolved, That this Society, with one accord, ask of the United States Veterinary Medical Society at its next annual meeting that steps be taken by the Committee on Legislation to seek by legislative enactment through Congress the establishment of a National Board of Examiners, with authority to confer the diploma of "The Veterinary Regents of America," and that the degree so conferred shall be final and the only recognized certificate of proficiency to practice the art in the United States.

Dr. Morris spoke very favorably of having it offered at the meeting of the United States Veterinary Medical Association, to be held in September, 1892, and acted upon, as great benefits would be derived by having a United States Board of Regents established which would compel all veterinarians to pass the examination of this board, thereby making a universal standard throughout the United States.

Dr. Wende.—Have any of the members any remarks to make on the resolution offered by Dr. Morris?

Dr. McLean.—It would not be constitutional to pass such a law as Dr. Morris suggests. It is a stepping-stone to establish a national school for veterinary medicine, and we cannot do it. I move the report be received. Carried.

Dr. Morris.—I do not agree with the Doctor, judging from our experience when we started. Professors Law and Liautard say it is constitutional. I prefer it should be worked for New York State alone, and would like to see it succeed, but it will take money to do it.

Dr. McLean.—I think the bill as presented was all right, if we could get it. But there cannot be general laws that will interfere with State laws.

Dr. Morris.—I think we can get it if every man will work for his Congressman. I agree with Dr. McLean; let every man see his Senator and Assemblyman. I had to face one hundred letters from empirics when at Albany, and I cannot express a very favorable opinion of Dr. Goldberg as a professional man.

Dr. Baker.—The member from my district supported the bill.

Dr. McLean.--Kings and Queens counties will support the bill.

Dr. Hinkley.—I am fully in accord with the bill, but think we ask too much. Let us ask for a distinction to be made between the veterinary surgeon and the farrier, and get it passed. I would like to see the members of this Society attend the meetings more than they do, and not stand back and ask for protection, but come forward and work on the committees.

Dr. McLean.—It should be made a cause for punishment if they do not do so.

Dr. Morris.—Some members of the Legislature think we ought to protect the empiric, and help to raise him instead of asking for laws to compel him to come up to the standard. It was Dr. Goldberg who helped to a great extent to defeat the bill.

Dr. McLean.—I think we ought to amend the present law by giving the State Society power to prosecute all empirics who come here to practice.

Dr. Hinkley.—Do you want an amendment to the present law that will compel all veterinary surgeons to register?

Dr. McLean.—Yes; and give the State Society power to prosecute all who are not registered.

Dr. Hinkley.—I do not think we can punish them, as no one will do it for us.

Dr. Baker.—The fine for not registering is $200 as the law stands now.

Dr. Jno. Bell. I make motion to adjourn until 2 P.M. Carried.

AFTERNOON SESSION.

Dr. Jno. Wende. Is there anything further concerning the matter of legislation?

Dr. Jno. A. Bell. I move the report of the committee be received and approved. Carried.

Dr. McLean. I move that the committee be continued, and that they prepare an amendment to the present bill, giving power to the State Society to prosecute all who are practicing without complying with the law of 1886, and prosecute all who swear falsely, for purjury, fine them, one-half of fine to go to the Society. Carried.

Dr. Morris. Will the Secretary read the names of the Committee on Legislation?

Dr. Hinkley. The following are the members of this committee: Drs. R. A. McLean, C. D. Morris, R. R. Bell, N. P. Hinkley, Geo. H. Berns and Professors James Law and A. Liautard.

Dr. Wende.—Committee on By-laws and Constitution report.

Dr. McLean.—We have not been able to make any progress as yet. I as chairman have notified the members of the committee to meet, once at Albany and once at Syracuse, but being unable to get them together we could not act, I move the report be accepted and the committee be discharged.

Dr. Morris—I amend that we accept the report with thanks to the committee. Carried.

Dr. Hinkley.—I make a motion the Vice-President be empowered to appoint a committee of five on revision of by-laws and constitution. Carried.

Dr. Wende.—I appoint the following as a Committee on Revision of By-laws and Constitution: Dr. R. A. McLean, Chairman, Brooklyn; Dr. L. E. Willyoung, Albion; Dr. Jno. A. Bell, Watertown; Dr. C. D. Morris, Brooklyn; Dr. W. L. Baker, Cortland.

Dr. McLean.—I would suggest that all essayists write their papers from their own experience and not copy from books or journals.

Dr. Wende.—Any new business?

Dr. Hinkley.—I have a letter from Dr. W. Horace Hoskins, Secretary of the United States Veterinary Medical Association. He is very anxious that this Society should be well represented at their next meeting to be held at Boston, Mass., in September, 1892, and I would advise all who are not members of that Society to send in their applications at once; it will be a three days' session, and I am sure you will all enjoy it very much. The important question of how we shall visit the International Meeting in Chicago, in 1893, will be freely discussed and decided upon. Also the question of the standard of members of the profession who will be allowed to become members of the Association. It will be a great benefit to all of you to attend, as most of the members of this Association are very talented men.

Dr. Morris.—I want the Society to make as good a showing as possible at this meeting, as important questions will be discussed.

Dr. Willyoung.—Elect as many delegates as will attend.

Dr. Wende.—Will the gentlemen who expect to attend stand up. The following were elected delegates to attend the meeting of the United States Veterinary Medical Association, to be held at Boston Mass., in September, 1892. Drs. E. J. McLeod, N. P. Hinkley, C. D. Morris, Jno. A. Bell, Jno. Wende, W. L. Baker, J. M. Chase, R. A. McLean.

Dr. Morris, I coincide with Dr. McLean's idea of writing papers on facts as they occur in our practice. I would like good advice on castration in lower animals. I try every manner possible to make it a successful operation, by keeping everything clean and using antiseptics in every instance, and yet the colts will die, while on the other hand the empirics will go out and castrate a colt on a manure heap, using dirty ropes, dirty cords and everything about him smeared in dirt, and his case will come out all right; if any of you can tell me the reason why I would be pleased to learn.

Dr. Wende.—I have had a large experience in castration, operated upon three hundred last year and lost three with peritonitis; at the same place I lost two this year. In one

instance last year I operated on four for one man; one was sent to the pasture and recovered nicely, three were kept near the barn and two of them died, but I saved the third one.

Dr. Cowie.—I think quacks lose more than we know of, while if we lose one our reputation is at stake and it is reported.

Dr. Chase.—I want to ask Dr. Wende what he thinks caused the death of his colts?

Dr. Wende.—In one case where a quack operated the year before I think the colts were trifled with; I think where other diseases are being treated at the same place death will be caused by germs, and that the germs can be carried in the clothes from place to place.

Dr. McLean.—I will not castrate any more in my hospital.

Dr. Hinkley.—I will not castrate any more in my hospital, and had decided upon this some time ago.

Dr. Morris cited a case where he believes he carried tetanus from a patient to a colt recently operated on and it died.

Dr. Chase.—Is there any one present who has castrated without losing any?

Dr. W. Huff. I have never lost a case.

Dr. W. L. Baker. I can say the same.

Dr. Chase. I make motion that Dr. Wende appoint a committee of two, to choose subjects for the members to write on and discuss at the next meeting. Seconded and carried.

Dr. Wende. I appoint Dr. R. A. McLean and Dr. J. M. Chase. The subjects chosen were: "Influenza and its complications." "Antiseptics, their Uses and Modes of Application." "Tuberculosis, especially its Generation."

Dr. Hunter. I would like to hear the opinion of the members on purpura-hemorrhagica. I was called to a case where a good mare had a swelling as large as the fist about half way down the trachea. She looked well, appetite was good. At first I thought it was a bruise caused by the manger; after a week I was called again and found the neck badly swollen all the way to the thorax. She could drink water good, but the food came out of the nostrils when trying to

swallow. I gave aconite, fomented the swellings; after a few days she appeared all right. The symptoms of purpura were prevalent. I gave ergot, chlorate of potash and tinct. iron. The head was swollen, but after a few days the symptoms all disappeared and she seemed all right. On following Sunday I was called and found her in pains similar to colic; gave a hypodermic injection of morphia, which quieted her, but she died that night. I held a post-mortem the next afternoon; did not find any injuries internally, but on taking off the front leg I found an abscess on the inside of the scapulus, about the size of a two-quart pail. I had three cases, all presenting different symptoms. There were abscesses in two of them, but not any in the third. Have had several cases during past two months. Have the best results from treating with nux vomica.

Dr. Morris. I have good success by evacuating the bowels and treating locally with stimulants and tonics.

Dr. Robinson. I had two cases which I treated successfully with powered and fld. ext. nux vomica.

Dr. Hinkley. Have any of you derived any benefit from giving chlor. potash in purpura?

Dr. Willyoung. Only in quantities sufficient to produce a laxative condition of the bowels.

Dr. Hinkley. Would you advise using it to produce a laxative effect in purpura?

Dr. Willyoung. No sir.

Dr. Morris. I like iodide potash best.

Dr. Hinkley. I have treated twenty-five to thirty cases without loss of any; used po. nux vomica, quinine and tinct. iron, and used turpentine for the kidneys if needed. I use ice instead of fomentations.

Dr. Baker. I use iron and quinine successfully.

Dr. Morris. I think Dr. Hunter treated scientifically; I have used ice water with good results.

Dr. Hunter. How do you use ice?

Dr. Hinkley. Use a packing of ice and brand or salt and bind on. I think Dr. Hunter's cases would have proven fatal under any treatment. I know of veterinarians in Cleve-

land who use per-oxide hydrogen successfully. I have had no success with it in purpura.

Dr. Drinkwater. Have any of you had a case of purpura in dogs? I have a case; the symptoms are similar to those in a horse.

Dr. Hinkley.—Had the dog been sick previous to this?

Dr. Drinkwater.—Yes, two or three weeks with distemper; I have not had time to study up the case thoroughly before coming to the meeting.

Dr. Baker.—I have several cases of a disease in the region of the horns of cattle caused by a small black fly. Do not find a remedy as yet.

Dr. French.—Have had several cases and used tar with good results; I do not consider it a serious trouble.

Dr. Palmer.—Have treated several cases successfully with tar.

Dr. McLean.—I make a motion that all members who are two years in arrears must pay up before the next meeting or have their names dropped from the roll, and that the Secretary notify them to this effect. Carried.

Dr. McLean.—I make a motion that a special assessment of $2.50 be made on each member of this Society to liquidate the indebtedness of the Society. Carried unanimously.

Dr. Robinson.—I make a motion that the matter pertaining to Drs. Wm. Somerville, Wm. Somerville, Jr., and Robt. M. Somerville be brought before the Board of Censors to be acted upon. Carried.

Dr. Wende.—Will the Chairman of the Board of Censors report what action has been taken in this matter.

Dr. Jno. A. Bell.—We have not received any correspondence from the Drs. Somerville on this matter, consequently have taken no action thus far.

Dr. Wende.—The Secretary will please read the correspondence on this matter.

The Secretary read all of the correspondence on the matter.

Dr. Wende. What action will the Board of Censors take?

Dr. S. Somerville, Jr.—I make a motion that the matter

pertaining to Dr. R. M. Somerville be laid over until the next meeting.

Dr. McLean. We ought to settle it now and not allow these matters to drag along.

Dr. Wende. I appoint Dr. McLean to fill the vacancy on the Board of Censors during this meeting. Said vacancy caused by absence of Dr. James.

Dr. Wende. The Board of Censors will retire to a private room in company with Dr. S. Somerville, Jr., to act upon the matter pertaining to the Drs. Somerville.

The following is the decision of the Board of Censors: That the resignation of Wm. Somerville, Jr., as received, be not accepted, that he be expelled from the New York State Veterinary Medical Society. That the cases of Wm. Somerville, Sr., and Robt. M. Somerville be laid over until the next meeting, and that no charges have been preferred against S. Somerville & Son; and that Wm. Somerville, Sr., and Robt. M. Somerville be notified by the Secretary to appear before this committee and confirm the explanation given to-day.

JNO. A. BELL, JNO. WENDE,
R. A. MCLEAN, O. B. FRENCH,
J. M. CHASE,

Board of Censors.

During the special session of the Board of Censors quite a discussion took place regarding hernia in colts and calves, and the different modes of treatment. Several members cited some cases with which they had to deal during their practice. The subject of the black fly, which has appeared among the dairy farms of this State, was brought up again for discussion and several remedies were recommended, among them crude oil, fish oil and carbolic acid, the latter recommended by Prof. Law.

Dr. Robinson gave a very interesting description of a case which he had in his hospital. A horse seven years old ran a stick into his body eighteen inches; during the treatment he made incisions in seventeen different places and removed two quarts of pus from the sheath; after six weeks' treatment,

using peroxide hydrogen and salicylate soda and quinine as a constitutional remedy, he made a good recovery.

A discussion regarding changing the place of meeting at different times led to a vote which resulted in favor of changing; also the matter of having one meeting per year of two days' session, instead of two meetings of one day each. A vote resulted in favor of the former, this was done to get the opinion of the members present. The change cannot be made until after the revision of the by-laws.

Dr. McLean. I find that I can always learn something of value to me at these meetings. At the annual meeting the subject of pyoktanine and its uses was discussed. Since then I have met with wonderful success in using it; I feel that I am indebted to the New York State Veterinary Medical Society for this.

Dr. Bell. I have used it with equally good results.

Dr. Wende. I have used it with good results where other remedies have failed.

Dr. Baker. How does Dr. Hinkley use pepsin in fistula-withers?

Dr. Hinkley. I fill the cynus full of crystal pepsin and the wound with absorbent cotton; I find that it eats its way through. I have found it very good in poll-evil also, I have healed some with pyoktanine.

Dr. Wende. I use spirits turpentine in fistula-withers and get good results.

Dr. Chase. What becomes of the cynus?

Dr. Wende. It fills up with granulations. I used it on my own horse six years ago and have had no trouble with it since.

Dr. McLean. Do you recommend the injection of one or two drachms of turpentine into the sores?

Dr. Wende. Yes; it will not hurt them.

Dr. Gowland. I get good results from iodine one part, glycerine two parts.

Dr. Bell. How long do you use turpentine?

Dr. Wende. Until it is all healed.

Dr. Chase. How much do you use?

Dr. Wende. Enough to fill the sore.

Dr. McLean I was called in consultation in a case of fistula withers; passed probe down 7½ inches, cut through, and drew seton through. At the end of five days again sent for me; I found a nasty discharge; took out seton, used injection of pyoktanine; made good recovery.

Dr. Bell. I would like to have a treatise on locomotor ataxia.

Dr. McLean. Would suggest two ounces lead and powder.

It was getting late, and all business being disposed of, it was moved and seconded that the Society tender a vote of thanks to Mr. Fife for his kindness in granting the use of the assembly room to the Society, and that we adjourn until the annual meeting, to be held in January, 1893, subject to a call by the Secretary.

N. P. HINKLEY, D.V.S., *Sec'y.*

MASSACHUSETTS STATE VETERINARY ASSOCIATION.

The regular meeting of the Massachusetts Veterinary Association was held at 19 Boylston Place, Boston, Wednesday evening, June 22d, 1892, at 7.30 o'clock. President L. H. Howard in the chair.

Members present: Drs. Bryden, Blackwood, Becket, Burr, Emerson, Hadcock, Harrington, Howard, Marshall, Osgood, Peterson, Winchester, Winslow, Hitchcock, Parker, LeBaw, and the Secretary. Honorary member: Dr. Stickney. Guests: Mr. T. L. Bolton, of Clark University, essayist of the evening; E. P. McKenna, M.D.V., and Mr. W. M. Balmer.

Records of the last meeting read and accepted.

Motion made by Dr. Hitchcock that Dr. Bunker be given a vote of thanks for the paper read by him at the last meetiug. Carried.

Dr. Burr brought up the point that cases reported by members should not be fathered by the Association as correct, unless the diagnosis was verified by a microscopic ex-

amination in instances where the microscope could settle a matter of doubt. For instance, Dr. Bunker's case of tuberculosis of the liver in a bull should be settled by finding the tubercle bacilli in the specimen before we accept it as such. The members present seemed to think this point well taken.

Dr. Howard here left the chair, which was taken by 1st Vice-President Burr.

Dr. Burr thought it ought to be voted by the Association that it could not accept Dr. Bunker's case of tuberculosis of the liver until it was properly verified.

Dr. Hitchcock thought it would be sufficient if the President ordered the Secretary to make a note in the records upon the point in dispute.

The name of Dr. Wm. Stinson, of Chelsea, a graduate of the New York College of Veterinary Surgeons, was then balloted upon, Dr. Winchester, teller. Sixteen votes were cast all in the affirmative. Dr. Stinson was therefore declared elected.

Applications for membership were received from Wilbert Soule, M.D.V., and E. P. McKenna, M.D.V. Dr. Osgood, Chairman of the Executive Committee, reported favorably upon their credentials. The names were laid on the table to be voted upon at the next regular meeting, according to the provisions of the Constitution.

Dr. Howard here took the chair again. He said that as this was the last meeting of our Association before the meeting of the United States Veterinary Medical Association in September, we ought to send its Secretary an official notice of our plans for entertaining its members.

Dr. Osgood moved to invite the members of the United States Veterinary Medical Association to be our guests Wednesday, the second day of the meeting.

Dr. Osgood amends his motion to read Wednesday afternoon. Considerable discussion followed. Dr. Bryden opposed having a recess the second day, on the ground that the entertainment would break in too much on the routine work laid out for the meeting.

Dr. Winchester thought that if a recess were taken by 3 or 4 o'clock Wednesday afternoon, it could do no harm.

Drs. Osgood and Hitchcock both spoke in favor of breaking the monotony of the meeting by having the Association's entertainment on the afternoon of the second day.

Dr. Burr sided with Dr. Bryden, believing nothing should interfere with the routine of the meeting, and that it would be better for entertainment to come upon the third day.

The question was then put, and the motion carried.

Mr. T. L. Bolton, of Clark University, Worcester, then read a very interesting paper upon the results of the microscopic examinations made there upon the old horse killed at Ward's Wharf last July, owned by the Association, and treated awhile by Dr. Bryden. (For Dr. Bryden's report see the records of the meeting held Nov. 25th, 1891.)

Mr. Bolton's paper proved very interesting. He reported certain degenerative changes in portions of the cord and its nerves, sent to the university for examination. Of course, one swallow does not make a summer, but it would be interesting to examine a number of cords from horses with springhalt and see if similar changes could be found.

(NOTE.—Members of the veterinary profession having any cases of death among patients that may have been afflicted with springhalt, might be benefitting science by removing the portion of the cord, with some of the nerves of the lumbo-sacral plexus, and sending the same to Dr. H. H. Donaldson or Mr. T. L. Bolton, Clark University, Worcester, Mass., where they will be very glad to make the microscopic examination. If possible, a history of the case ought to accompany the specimen. The specimen should contain the cord posterior to the tenth dorsal vertebra, with some of the lumbo-sacral nerves. It should be carefully removed, and sent in a glass jar containing a $2\frac{1}{2}$ per cent solution of bichromate of potash plus $\frac{1}{6}$ of its volume of 95 per cent. alcohol.)

Mr. Bolton's paper was discussed by many of the members present. Dr. Bryden said that he took cognizance of the fact that there might be changes in the spinal cord, but he questioned whether they were primary or secondary. He holds that solipeds, animals with feet confined in a horny box, are liable to peculiar forms of lameness, and that these trou-

bles begin in the hoof, leading later to disturbances higher up; these might occur in the muscles first, causing the tail to be carried to one side, or skipping a little when hurried before going lame. So in navicular disease, the first changes take place in the horny box itself, afterward leading to the changes in the bone, etc.

Dr. Bryden believes in "hoof culture." Don't fire and blister a spavin; it is humiliating to the profession, but attend to the foot. But to return to this case, he thinks the changes in the cord were secondary.

Mr. Bolton does not agree to this, because sensory changes in the cord cannot be secondary. The degeneration is *from the center* to the *periphery*.

Dr. Bryden thinks that solipeds have a class of diseases that no other animal is subject to, and that these progress from the periphery in, and cannot be a chorea or anything like that. He thinks we have a splendid subject for investigation, but holds that it is peripheral disturbance.

Dr. LeBaw thinks the breaking of a small artery anterior to the lesions found ought not to cause a degeneration of the cord, as a small artery is given off at every articulation, and anastamoses are free there.

But, Mr. Bolton says, if a nerve's nutritive supply is cut off, that fibre dies to where it comes in contact with the next nerve cell, the nerve cell is the center of nutrition for that fibre—that is, for a sensory fibre, while a motor fibre degenerates toward the brain.

Dr. Marshall wants to know if it can be a hereditary disease. Can a blood vessel be hereditarily weakened? All do not agree that it is hereditary.

Dr. Parker remembered seeing a tumor in a cord in which case degeneration extended both ways. Can this occur from the rupture of a blood vessel?

Mr. Bolton. That depends upon the size of the area supplied by that blood vessel.

Motion made by Dr. Hitchcock that we extend to Mr. Bolton and the professors at Clark University a vote of thanks for the trouble they have taken in investigating this case. Carried enthusiastically.

Moved by Dr. Hadcock, that we have a special meeting the second Wednesday in September. Carried.

Meeting then adjourned.

AUSTIN PETERS, *Secretary.*

UINTED STATES VETERINARY MEDICAL ASSOCIATION.

PATERSON, N. J., August 16th, 1892.

DEAR SIR:—It is my very pleasant duty to advise you of your appointment as a member of the New Jersey State Committee of Arrangements—United States Veterinary Medical Association. A list of the members of this committee is enclosed herewith, so that you may know who your associates are. It has been my object in the selection of this committee to make it representative of the veterinary profession of New Jersey in the fullest sense of the word.

Dr. Hoskins writes me that the hall has been obtained, and that the usual one and one-third rates have been conceded us by the Trunk Line Association, which covers our entire territory. A special method is being made to make the forthcoming meeting at Boston a greater success than any preceding meeting of the Association, and the profession in New Jersey should be fully and ably represented.

It will be necessary to call a committee meeting very soon in order to complete the local arrangements. Dr. Hoskins suggests that the committee issue a circular setting forth the facts about the Boston meeting, to be sent to every veterinarian in our State. I trust you will assist the cause with your presence and counsel.

I should be very pleased to receive suggestions from you. Let me hear from you at once, before the committee meeting is called.

Very respectfully,

WM. HERBERT LOWE,

Resident State Secretary, New Jersey U. S. V. M. A.

NEW JERSEY STATE COMMITTEE OF ARRANGEMENTS.

Annual meeting at Boston, Mass., September 20th, 21st and 22d, 1892: Drs. William B. K. Miller, Camden; R. L.

Loblein, New Brunswick; Richard R. Letts, Hoboken; Joseph Autenreith, Jersey City; D. J. Dixon, Hoboken; James D. Hopkins, Newark; James W. Hawk, Newark; E. R. Voorhees, Plainfield; J. Huelsen, Jr., Jersey City; A. T. Sellers, Camden.

WM. HERBERT LOWE,
Resident State Seeretary, New Jersey U. S. V. M. A.

PATERSON, N. J., August 5th, 1892.

Approved.

W. HORACE HOSKINS, *Secretary.*
RUSH S. HUIDEKOPER, *President.*

NEW JERSEY VETERINARY MEDICAL ASSOCIATION.

The last regular meeting of the New Jersey Veterinary Medical Association was held at Saenger Hall, Belmont Avenue, Newark, N. J., on Thursday, August 11, 1892. Meeting called by the President (Dr. Dustan), at 11 A. M.

DR. W. H. COOPER, *Sec'y.*

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of this Association will take place on the 6th of September, at the Hotel Allen, Allentown.

A cordial invitation is extended to members of the profession desiring to attend. Among the many inducements offered by the Association are the readings of the following papers: "Tuberculosis in Cattle," by Dr. L. Pearson; "Criptorchids," by Dr. J. A. Waugh; "Spavin," by Dr. J. C. Bartholomew, and "Intussusception," by Dr. J. S. Butterfield.

INDIANA VETERINARY ASSOCIATION.

After a period of two years of inactivity, a meeting of the Indiana Veterinary Association (Indiana Association of Veterinary Graduates), was convened at the State House, Indianapolis, July 20th, 1892, with Vice-President C. F. Bell, of Kokomo, in the chair.

In the absence of the secretary, G. G. Ferling, V.S., was appointed secretary pro tem. Present: C. L. Bell, Kokomo; E. F. Diggs, Winchester; M. Y. Schaffer, Greenfield; G. G. Ferling, Richmond; A. D. Galbraith, Greenburg; T. L. Armstrong, Indianapolis; W. L. Williams, LaFayette; J. H. Honan, Delphi; J. E. Cloud, Richmond; Lee Hoover, Richmond; Dr. Klotz, Arcadia; H. G. Carnes, Franklin; Prof. T. S. Smith, State College, Miss.

The following new members were elected: W. L. Williams, LaFayette; J. H. Honan, Delphi; Dr. Klotz, Arcadia; H. G. Carnes, Franklin. T. L. Armstrong, of Indianapolis, was elected an associate member.

No election having occurred at the regular time in January, 1892, officers were elected for the remainder of the year as follows: President, W. L. Williams, La Fayette; first Vice-President, C. F. Bell, Kokomo; second Vice-President, G. G. Ferling, Richmond; Secretary, J. G. Cloud, Richmond; Treasurer, A. D. Galbraith, Greensburg.

The Association then listened to a paper entitled "Contagious Pleura-Pneumonia of the Horse," by W. L. Williams, which was followed by a discussion participated in by Drs. Butler, Bell and Honan.*

The report of the retiring Treasurer, E. F. Diggs, showing a balance on hand of $14.26, was submitted and approved. The treasurer prior to Dr. Diggs had apparently been careless in the keeping of Association accounts, and it was found impossible to determine each member's arrears in dues, and on motion of Dr. Bell, the treasurer-elect was ordered to collect delinquent dues for 1891 and 1892, and receipt therefor. The Treasurer was instructed to produce suitable stationery for conducting his duties.

On motion of C. F. Bell, it was decided to hold the next regular meeting at Kokomo, in January, 1893.

The President briefly called attention to the approaching meeting of the United States Veterinary Medical Association at Boston, September 20th to 22d, and urged Indiana veterinarians as far as possible to attend.

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*This paper is published in this issue.

Although this meeting was by no means what could have been desired, the interest and determination manifested by those present indicated clearly that a united effort is to be made to place the Association on a firm footing, aud a successful meeting at Kokomo in January is confidently anticipated.

J. E. CLOUD *Sec'y.*

W. L. WILLIAMS, *Pres.*

BIBLIOGRAPHY.

LES MALADIES DU JEUNE CHEVAL (Diseases of Colts). BY M. P. CHAMPETIER. J. B. Bailliere and Son, 19 rue Hautefeuille, Paris.

By their frequency, sometimes their nature, and the severity and mortality which accompany their appearance, diseases most common to horses in their youth, as colts, present special interest, particularly to breeders, and also to the veterinarian practicing in breeding districts.

In this book of some three hundred and forty-eight pages, with several colored plates, the author successively passes in review gourme (distemper, strangles?), scarlatinoid, equine variola, infectious pneumonia, diarrheic enteritis, arthritis of colts, aphtha, and parasitic affections. Written in a concise and scientific manner, Maladies du Jeune Cheval will be a good addition to the library of the veterinarian versed in French.

THE PHYSICIAN HIMSELF. BY D. W. CATHELL, M.D. Tenth Edition. F. A. Davis & Co., Philadelphia.

The tenth edition of this book has been sent to us. It is with pleasure that we again read the sound and good advice embodied in its pages by the author. To many of our readers the title might suggest but little benefit in perusing it, but in the Physician Himself, the young veterinary graduate, the inexperienced veterinarian, and even the older practitioner, will find discriminating points of conduct which will be of exceeding benefit. It is, so to speak, a course on ethics ; but on ethics based on rules of what is right and proper conduct for the professional man to reach success in life.

SUNDRY ITEMS.

From the *Edinburgh Veterinary Gazette* we extract the following changes made in the Faculty of Dick Veterinary College:

The new appointments in connection with the Royal (Dick's) Veterinary College, consequent on the resignation of Professor M'Fadyean, are as follows:—Chair of Veterinary Surgery and Obstetrics, J. R. M. Dewar, F.R.C.V.S.; Chair of Anatomy and Histology, A. E. Mettam, M.R.C.V.S.; and Lectureship in Pathological Histology and College Assistant, S. Stockman, M.R.C.V.S. All three gentlemen are graduates of the college. Mr. Dewar was a distinguished member of Sir Joseph Lister's class in the University. Mr. Mettam gained the Dick Bursary for 1889, and was also first prizeman in the Fitzwygram competition for that year. Mr. Stockman, after graduation, went to Alfort, and worked in Nocard's laboratory.

NEW DOG HOSPITAL.—Among the important and interesting buildings recently started in Philadelphia, there is one of unusual interest from the particular purpose to which it is devoted. Some time since the Trustees of the University of Pennsylvania authorized the building of a hospital for dogs, the architects appointed being Frank Miles Day & Brother.

Considerable time was taken for giving the plans and the entire project the fullest consideration in order to make the building the most complete and efficient of its kind in the world, which it will be, though the first in this country. There are several in Europe, a notable one being at Berlin, which, in some particulars, this will resemble, though it will be larger and more complete.

Under the supervision of the architects it is now being erected on the grounds of the University of Pennsylvania in West Philadelphia, and will be completed in September.

The exterior will be very attractive, of Roman hydraulic pressed face-brick and pebble-dashing, with Lake Superior

red-stone trimmings, the roof being of unfading green slate. It will cover an area of about 65x50 feet.

There will be two stories and a basement, the latter to contain, besides the rooms for ordinary cellar purposes, a kitchen with every facility for cooking the food for the dogs, heating the water for the baths, etc.

On the first floor the commodious clinic room will open into the elegant apartment, that for non-contagious cases. At either side of the latter will be the mange ward and the distemper ward, both being separated from it by heavy brick partitions, the communication with all other parts of the building from these wards being effected only by going outside and around.

In the three principal wards, as also in the bath-rooms connected with them, there will be polished granolithic pavements, and the walls to a height of five feet will be covered with six-inch square white enamelled tiles. Above the tiling the walls and the ceiling will be of adamant plaster. The dogs will be in separate cages upon wheels, and may thus be removed for disinfection, to the baths or to the clinic. From fifty to sixty of these cages will probably be in use.

There will be special bath-rooms connected with all the wards, which with all the plumbing, have been matters of great consideration and are the best of the kind for the purposes. The bath-room for the non-contagious and surgical ward will be entirely apart from that of the mange ward. In the latter there will be two baths, one for the ordinary bathing and a smaller one for the medicated baths. There will be nine sinks and the drainage will of necessity be most carefully attended to.

Perfect systems of heating and electric lighting will be introduced, the special system of ventilation having been devised in consultation with the department of hygiene of the University. There will be special ventilating flues for each room, and each flue will be provided with a small electric fan, thus insuring perfect control of each separately, and perfect ventilation for all.

The second story will be of the same dimensions as the

ground floor, and divided into four rooms of sizes corresponding with the wards below, to be used as biological, pathological, physiological and histological laboratories.

Beside the specialists connected with this new branch of the University there will be the necessary and proper staff to act as superintendent, nurses and caretakers.

It has been decided that arrangements will probably be made whereby dogs not requiring special treatment, but belonging to persons who leave town in summer or any other time, will be properly cared for at such times in this institution.

STRONTIUM LACTATE IN TÆNIA., Labor de (*Journal de Med. de Paris*) has had excellent results in tænia with the usual dietary care from the following:

℞	Strontii Lact. (Paraf-Java),	ʒ j,
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This is practically the same strength as the standard solutions of Stront: Lact: (Paraf-Javal) used so largely in Albuminuria.—*Medical Standard.*

AS BROMIDE OF STRONTIUM seems to be destined to displace the bromide of potassium, we would specially recommend our readers to insist on having the chemically pure salts (Paraf-Javal) dispensed, or the standard solutions (ʒ j to the fluid ounce), so as to avoid further accidents, as we learn that toxic effects have been caused by the dispensing of impure strontium salts, the poisonous barium being a concomitant of the strontium preparations of commerce.—*St. Louis Clinique.*